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Matters relating to the definition and delimitation of outer space and to the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union

An analysis of the compatibility of the approach contained in the working paper entitled "Some considerations concerning the utilization of the geostationary satellite orbit"[a] with the existing regulatory procedures of the International Telecommunication Union relating to the use of the geostationary orbit

Working paper updated by the Secretariat in cooperation with the secretariat of the International Telecommunication Union

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[a] A/AC.105/C.2/L.200 and Corr.1.

I. Introduction

1. In 1996, at the thirty-fifth session of the Legal Subcommittee, the delegation of Colombia circulated a working paper entitled "Some considerations concerning the utilization of the geostationary satellite orbit" (A/AC.105/C.2/L.200 and Corr. 1). The working paper was considered by the Subcommittee, as well as by its Working Group on agenda item 4, entitled "Matters relating to the definition and delimitation of outer space and to the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union". The working paper was subsequently annexed to the report of the Subcommittee on the work of its thirty-fifth session (A/AC.105/639, annex III, sect. A).

2. The Legal Subcommittee at its thirty-fifth session endorsed several recommendations of the Working Group, including one in which the Working Group recommended that the Secretariat, in cooperation with the secretariat of the International Telecommunication Union (ITU), should provide, for the session of the Working Group to be held in 1997, an analysis of the compatibility of the approach contained in the working paper with the existing rules and procedures of ITU relating to the use of the geostationary orbit (A/AC.105/639, para. 35). That recommendation was subsequently endorsed by the Committee on the Peaceful Uses of Outer Space at its thirty-ninth session.[1]

3. Following this recommendation the Secretariat, in cooperation with ITU, submitted a working paper entitled "An analysis of the compatibility of the approach contained in the working paper entitled 'Some considerations concerning the utilization of the geostationary satellite orbit' with the existing regulatory procedures of the International Telecommunication Union relating to the use of the geostationary orbit" (A/AC.105/C.2/L.205) to the Legal Subcommittee at its thirty-sixth session in 1997.

4. In 1999, at its thirty-eighth session, the Legal Subcommittee endorsed the recommendation of the Working Group that the Secretariat, in cooperation with the ITU, prepare an update of the working paper. The recommendation was subsequently endorsed by the Committee on the Peaceful Uses of Outer Space at its forty-second session.[2]

5. Pursuant to that recommendation, the present revised working paper was prepared by the Secretariat, in cooperation with the ITU secretariat.

II. Existing regulations of the International Telecommunication Union relating to the use of the geostationary orbit

6. The legal instruments of ITU are established by its plenipotentiary and world radiocommunication conferences. The major principles included in the ITU regulations take into account those embedded in various United Nations treaties and legal principles on outer space. The most important of these, which has been taken as a basis for ITU space-related regulations, is the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (General Assembly resolution 2222 (XXI), annex).

7. The regulatory basis of the international regulation for the use of orbit/spectrum resources is found in the Constitution and Convention of the International Telecommunication Union,[3] which entered into force on 1 January 1996.

8. With regard to the use of the geostationary satellite orbit (GSO), the ITU regulations provide for two principles of frequency spectrum and GSO resource distribution. These are the principles of the rational, efficient and economic use (hereinafter referred to as "efficient use") of and equitable access to the resources.

9. These two principles of the ITU space regulations are laid down in the ITU Constitution, article 44, paragraph 2. This text was modified at the 1998 ITU Plenipotentiary Conference, and it now stipulates that:

> "In using frequency bands for radio services, Member States shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit, are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to those orbits and frequencies, taking into account the special needs of the developing countries and the geographical situation of particular countries."[4]

The revisions to the Constitution and Convention agreed at the 1998 Plenipotentiary Conference come into force on 1 January 2000.

10. The ITU Radio Regulations,[5] a binding international treaty setting out the procedures for all radio communication services, contain detailed regulations and procedures governing orbit/spectrum use.

11. The two principles of equitable access and efficient use have been introduced in the Radio Regulations through two different approaches, each of them being applied in different parts of the frequency spectrum:

(a) The equitable access principle is implemented through frequency/orbital position plans by setting aside adequate spectrum for such use. This approach, called a priori planning, grants future rights to each member State on the basis of agreed principles;

(b) The approach intended for efficient use is implemented in other frequency bands using a "first come first served" procedure, which is based on the coordination of the actual orbit/spectrum requirements. This approach, called the "coordination procedures", grants rights on a case-by-case basis as a specific case arises.

12. A priori planning ensures equitable access to orbit/spectrum resources. The progressive exploitation of the orbit/frequency resources and the resulting likelihood of congestion of GSO prompted ITU member States to consider more seriously the question of equitable access in respect of the orbit/spectrum resources. That resulted in the creation, and introduction into the ITU regulatory regime, of frequency/orbital position plans in which certain portions of the frequency spectrum were set aside for future use by all countries. In the plans, each country has been guaranteed a predetermined orbital position and the use, at any time, of a certain portion of the frequency spectrum. The plans, together with the associated procedures, guarantee for each country equitable access to the spectrum/orbit resources, thereby safeguarding their basic rights. Such plans govern a considerable part of the frequency usage of the most resource-demanding communication services, where congestion of GSO was foreseen by administrations.

13. The creation of frequency/orbital position plans was an answer to the requirement of those administrations, mainly of developing countries, which, at the moment of the

establishment of the plan, were not in a position to use those resources. Consequently, part of the frequency spectrum was set aside for future use through the application of the associated procedures without any further priority question being raised.

14. The coordination procedures ensure the efficient use of orbit/spectrum resources. In the process of establishing ITU space-related legislation, emphasis was placed from the outset on efficient and rational utilization. That concept was implemented through a "first come first served" procedure. This procedure ("coordination before use") is based on the coordination of actual orbit/spectrum requirements. The right to use a satellite position is acquired through negotiation between the administrations concerned by the actual usage of the same portion of the orbital segment. If applied correctly (i.e. to cover genuine requirements), the procedure offers a means of achieving efficient spectrum/orbit management; it serves to fill available positions in the orbit as needs arise and results, in principle, in an optimum orbital distribution of space stations. On the basis of the ITU regulations, and in the frequency bands where this coordination concept is applied, administrations of member States designate the amount of orbit/spectrum resources that is required to satisfy their telecommunication requirements. The national administrations then assign frequencies and orbital positions, apply the appropriate procedures (international coordination and recording) for the space segment and Earth stations of their (governmental and private) networks and assume continuing responsibility for the networks.

15. The ITU legal regime governing the use of GSO is the result of more than 30 years of continuous effort by the ITU member States. The regulatory framework is constantly being adapted to changing circumstances and has achieved the necessary flexibility in satisfying the two major, but not always compatible, requirements of efficiency and equity.

16. The last general revision of the Radio Regulations was effected by the World Radiocommunication Conference (WRC) held at Geneva from 27 October to 21 November 1997. That Conference continued to simplify and streamline the Radio Regulations and established procedures and technical limits for the introduction of large capacity non-GSO satellite systems for commercial communications. The revision of the Radio Regulations entered into force on 1 January 1999.

17. With the dramatic development in telecommunication services, there has been an increasing demand for spectrum/orbit usage for practically all space communication services. This increase is attributable to many factors. These include not only technological progress, but also political, social and structural changes around the world and their impact on the liberalization of telecommunication services, the introduction of non-GSO satellite systems for commercial communications, growing market orientation, the change in the way this widening market is shared between private and public service providers and the general globalization and commercialization of communication systems.

18. These elements led the Plenipotentiary Conference of the International Telecommunication Union, held at Kyoto, Japan, from 19 September to 14 October 1994, in its resolution 18,[6] to call for a new in-depth review of the ITU spectrum/orbit resource allocation procedures. The aims of the review were, *inter alia*, to ensure equitable access to resources, to better match coordination procedures to the needs of administrations of member States and to ensure better linkage between those procedures and commitments to actually implement networks. As part of the review, issues studied by ITU included the reservation of orbit capacity without actual use (thus creating "paper" satellites), which contributes to congestion; the uncoordinated use of spectrum and orbital resources; the lack of adequate mechanisms for dispute resolution in a situation in which complex satellite

systems might result in an almost continuous series of inter-system coordination; the efficient use of orbit and spectrum resources, particularly valuable orbital segments in which spectrum utilization could be enhanced by applying advanced technologies; and the problem of equitable access to orbit and spectrum resources.

19. In 1996, various bodies of ITU were engaged in seeking solutions to all those problems. The results of the review process enabled the membership of ITU to review the legal regime applicable to all space applications and services. A final report was submitted to the World Radiocommunication Conference held at Geneva in 1997. The Conference introduced several measures into the Radio Regulations intended to reduce the number of coordination requests that were not based on real needs. These include:

(a) A reduction in the time available between the commencement of the relevant regulatory procedures and the bringing into use of a satellite from six years, with the possibility of an automatic three-year extension, to five years, with a possible extension of up to two years subject to conditions;

(b) The need to provide "due diligence" information concerning contracts for satellite manufacture and for launch provision;

(c) An automatic cancellation of the regulatory process if the relevant stages of the process are not commenced in due time.

These requirements are expected to eliminate the cases that are not proceeding and would thus release frequency spectrum and orbit resources for other applications.

III. The approach described in the working paper and its compatibility with the existing regulatory procedures of the International Telecommunication Union relating to the use of the geostationary orbit

20. The present section deals with the principles recommended by Colombia in its working paper (A/AC.105/C.2/L.200 and Corr.1, sect. III).

21. Because ITU is a specialized agency of the United Nations and its membership is almost the same as that of the United Nations, the legal instruments established by ITU and the United Nations should be consistent. Therefore, it could be said that the approach contained in the working paper may be made compatible with the existing rules and procedures of ITU relating to the use of the geostationary orbit as long as the points described below are taken into consideration.

Recommendation (a)

22. The approach set out in recommendation (a) is aimed at remedying the difficulties, as seen by the sponsor of the working paper, of gaining access to the orbit/spectrum resources in the "non-planned" bands and services where the principle of "first come first served" prevails.

23. Recommendation (a) should ensure against the introduction of possible retroactive effects on those previously "filed" systems that benefit from the efficient nature of the applicable "first come first served" principle.

24. In addition, care must be taken that the preferential treatment of some of the claims to access GSO established by this provision do not lead to the creation of "paper" satellites, resulting in a reservation of an orbital position without actual use. The regulatory provisions introduced into the Radio Regulations by the 1997 World Radiocommunication Conference that are mentioned above should ensure that this would not occur.

25. The 1995 World Radiocommunication Conference established "simplified" coordination and notification procedures applicable to coordination between space networks. These simplified procedures were further refined by the 1997 World Radiocommunication Conference. It should also be considered that these "simplified" procedures may offer the minimum of operational restrictions possible referred to in recommendation (a) and may lessen instances of difficult processes of coordination between countries.

Recommendation (b)

26. Recommendation (b) states that the claim of countries to use frequencies and to occupy geostationary orbital positions in the cases provided for under recommendation (a) should be exercised in accordance with the provisions of the ITU Radio Regulations and that account should be taken of the provisions of Resolution 18 of the Kyoto Conference to guarantee effective use of the geostationary orbit.

27. As noted in paragraph 18 above, the Kyoto Conference, in its resolution 18, called for a new in-depth review of the ITU spectrum/orbit resource allocation procedures. The 1997 World Radiocommunication Conference reviewed activities under resolution 18 and introduced regulatory provisions into the Radio Regulations that address the concerns that were highlighted in that resolution and in the studies leading up to its adoption. This regulatory text implements concrete provisions that provide for the principles elaborated in resolution 18. The concepts of recommendation (a) might be further developed as a result of these conference decisions.

Recommendation (c)

28. ITU would welcome all possible efforts to be made to eliminate or remove space debris from GSO, as proposed in recommendation (c). The accumulation of debris and spent satellites may, in fact, become an obstacle to the efficient and economic use of the orbit.

Notes

[1] *Official Records of the General Assembly, Fifty-first Session, Supplement No. 20* (A/51/20), para.135.

[2] *Official Records of the General Assembly, Fifty-fourth Session, Supplement No. 20* (A/54/20), para. 94.

[3] *Final Acts of the Additional Plenipotentiary Conference* (Geneva, 1992): *Constitution and Convention of the International Telecommunication Union; Optional Protocol; Resolutions; Recommendation* (Geneva, 1993), as modified by the *Final Acts of the Plenipotentiary Conference of the International Telecommunication Union (Kyoto, 1994)* (Geneva, 1995).

[4] *Final Acts of the Plenipotentiary Conference of the International Telecommunication Union (Minneapolis, 1998)* (Geneva, 1999).

[5] *Radio Regulations* (Geneva, International Telecommunication Union, 1998).

[6] *Final Acts of the Plenipotentiary Conference of the International Telecommunication Union (Kyoto, 1994)* (Geneva, 1995).